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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/785,060	02/25/2004	Jim Threlkeld	248993US23	8942
22850 7590 08/21/2007 OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER MERCIER, MELISSA S	
			ART UNIT 1615	PAPER NUMBER
			NOTIFICATION DATE 08/21/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary	Application No. 10/785,060	Applicant(s) THRELKELD ET AL.	
	Examiner Melissa S. Mercier	Art Unit 1615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-11 and 15-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-11, 15-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Summary

Receipt of Applicants Remarks and Amended Claims filed on August 6, 2007 is acknowledged. Claims 1, 3-11, and 15-34 are pending in this application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4, 11, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Omura (US Patent 6,384,254).

Omura teaches a fiber or fabric treating agent composition comprising the quaternary ammonium salt-containing polysiloxane as a main component. "A variety of fibers and fibrous materials can be treated with fiber or fabric treating agent composition, by adjusting the emulsion of the composition to a suitable concentration, and applying the emulsion to fibers or fabrics as by dipping, spraying or roll coating. As a general rule, an appropriate coating weight of the quaternary ammonium salt-containing polysiloxane is about 0.01 to 10% by weight based on the weight of the fibers or fabric. The coated fabrics are then dried by hot air blowing or in a heating furnace. The drying conditions include about 100-150 degrees C" (column 8, lines 4-18).

Omura does not disclose reusing the bath in order to treat a second item.

It would have been obvious to a person of ordinary skill in the art to reuse the bath in order to treat a second item. The limitation of "reusing the bath in a further immersing step on a second composite item" is with the knowledge of one of ordinary skill in the art.

Applicant is reminded that where the general conditions of the claims are met, burden is shifted to applicant to provide a patentable distinction. Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. See *In re Aller*, 220 F.2d 454 105 USPQ 233,235 (CCPA 1955).

Response to Arguments

Applicant's arguments have been fully considered but they are not persuasive. Applicant argues types of emulsifiers. However, the disclosure of Omura discloses that the manner of treating the yarn apparently requires contacting the cloth with the treatment solution for one minute, followed by nip roll removal of excess treatment solution, and drying at temperatures of 135C, or one minute, and heat treatment at 165C for two minutes. In contrast, the present invention antimicrobial treatment merely requires immersion of the item to be treated, followed by separating the treated item from the bath, drying, followed by reuse of the treatment bath on a second composite item. Further, in a preferred embodiment, the drying step of the present invention is performed preferably at temperatures not exceeding 100C (see claim 16), and most

preferably in a conventional household dryer (about 70-90C; see claim 17). Such a process permitting reuse of the treatment bath is nowhere disclosed by Omura.

It is noted that Omura does not disclose the limitations of 16-17, which is why the claims have not been rejected over Omura alone. Additionally, it is noted that applicant has used the terminology comprising in the method steps, therefore, Omura would still read on the instant claims, regardless of the additional method steps it discloses.

Furthermore, as discussed in the office action dated February 5, 2007, the examiner reiterates, Applicant argues, "at column 7, lines 24-59, the treating agent of Omura is prepared by first dissolving the polysiloxane in an organic solvent, or by emulsifying using one or more types of emulsifiers". While Omura discloses an emulsion of the of the quaternary ammonium salt-containing polysiloxane typically prepared by dissolved the salt in an organic solvent, it is noted that water is then added, making it an aqueous solution (column 7, lines 55-59). Additionally, Omura discloses, "the emulsion may be prepared by mixing the organopolysiloxane with a surfactant and emulsified in water" (column 7, lines 60-62).

Claims 1, 3-4, 7, 9, 11, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rubin et al. (US Patent 5,565,265) in view of Omura et al. (US Patent 6,384,254) or vice versa.

Rubin teaches "a liquid and stain resistant, antimicrobial fabric. A coating composition comprising a copolymer composition, an antimicrobial agent and a fluorochemical composition are applied to fabric to produce the coated fabric" (abstract).

Formulation A of Specific Example 1 (coating composition) comprises:

Acrylic Polymer (5-10% weight)
Fluorochemical (4-8% weight)
Biocide/Mildewcide (0.25-1% weight)
Water (remainder to 100% weight).

Formulation B of Specific Example 2 comprises:

Acrylic latex polymer (90-95% weight)
Fluorochemical (4-6% weight)
Biocide/Mildewcide (0.25-1% weight)
Thickener (1-3% weight)

According to Specific Example 2 (method of coating fabric using Formulation A), "fabric is placed on A Frames and then placed on a tenterframe. The fabric is then coated with all the ingredients in liquid form. On the first pass, the fabric is completely wet. It is then passes through an oven at approximately 300 degrees F to about 350 degrees F" (column 3, lines 52-64). The examiner is interpreting the method steps to indicate the fabric being completely submerged into Formulation A, removed from the bath, and then dried.

Regarding Claim 3, Specific Example 2, further teaches "formulation B is applied at a constant thickness of about 1 mm with a blade. The purpose of this coating is to fill in the spaces between yarns" (column 4, lines 8-9).

Regarding Claims 7 and 9, applicant's specification states that "a continuous process includes both truly continuous processes and semi continuous processes in

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which there are periodic stops for product type changes, other line medications or any other reason" (page 6, lines 22-25). Rubin's Specific Example 2 teaches the method of coating the fabric to be accomplished in 3 different passes. Pass One, wherein the fabric is coated with a mixture of acrylic latex polymers, fluorochemicals, and antibacterial, chemicals, Pass Two, wherein, the fabric remains on the tenterframe and is coated with a fine layer of acrylic latex polymers, fluorochemicals, and antimicrobial agents, and Pass Three, which is identical to Pass Two. The fabric is also dried in an oven between passes.

Rubin does not disclose the use of a silicone based quaternary ammonium salt.

Omura's teachings are disclosed above and applied in the same manner. As noted above, Omura discloses the use of quaternary ammonium salt-containing polysiloxane as an antimicrobial agent.

It is generally considered to be *prime facie* obvious to combine compounds each of which is taught by the prior art to be useful for the same purpose in order to form a composition that is to be used for an identical purpose. The motivation for combining them flows from their having been used individually in the prior art, and from them being recognized in the prior art as useful for the same purpose. As shown by the recited teachings, instant claims are no more than the combination of conventional components of antimicrobial agents. It therefore follows that the instant claims define *prime facie* obvious subject matter. Cf. In re Kerhoven, 626 F.2d 848, 205 USPQ 1069 (CCPA 1980). It would have been obvious to a person of ordinary skill in the art to substitute one antimicrobial agent for another capable of performing the same function.

Response to Arguments

Applicant's arguments have been fully considered but they are not persuasive. Applicant's arguments concerning the Omura reference are discussed above and applied in the same manner. Applicant additionally argues, Rubin also discloses a process that requires significantly high temperatures as part of a heat treatment after the fabric has been treated. However there is nothing within Rubin to suggest the regeneration of antimicrobial properties by contacting the treated item with hypochlorite solution. It is noted that the rejected claims do not limit the temperature of the drying step. Additionally, it is noted that the instant claims recite "wherein the antimicrobial properties CAN BE regenerated after one or more uses by contacting....". The limitation of contacting the treated item with of hypochlorite solution is not a method step limitation of the instant claim, but rather a functional limitation. It is the examiners position that since the prior art teaches the same basic method steps and the same composition used, the treated item would have the same functional properties.

Claims 1, 4-6, 9-10, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brier (US Patent 6,756,076) in view of Omura et al. (US Patent 6,384,254) or vice versa.

Brier teaches "a process for producing hydrophobic cotton fabric view a multi-step manufacturing process that results in a fabric that retains its hydrophobic characteristics even after numerous machine washings. Cotton fabric according to the process disclosed by Brier is suitable for use in various applications wherein a

hydrophobic cotton material is desired, such as clothing, undergarments, incontinence products, underarm cotton shields, bedding products, diapers, apparel, and lingerie items, furniture coverings and fabric, curtains, gloves, footwear, headwear, tents, sleeping bags, and lab coats (column 1, lines 55-66).

Brier further teaches "the process may be adapted to produce fabric having both antibacterial and water repellant properties according to the following steps:

1. bleaching the cotton fabric with a suitable optical whitener
2. affixing the fabric to a conveying machine
3. applying approximately 3lbs of antibacterial substance and 2lbs of water repellent for each approximately 100lbs of cotton fabric by conveying the fabric through a pad bath
4. conveying the fabric through a tenter frame machine having a heating device set at approximately 325 degrees F at a speed of approximately 40 yards per minute
5. repeating step 4 a second time to effect curing of the chemicals thereby resulting in a water resistant cotton fabric. Brier uses the bacteriostat, triclosan, however, the use of any suitable equivalent compound is considered to be within the scope of their invention" (column 3, lines 41-60, column 4, lines 1-10).

Regarding Claim 9, the process of Brier described above states in step 4, the fabric is conveyed through a tenter frame machine. This would indicate to one of ordinary skill in the art that the fabric is being continuously pulled through the pad bath.

Regarding Claim 10, according to the drawings supplied by Brier, one of ordinary skill in the art would recognize that in order for the fabric to be fed through the tenter frame, it would have to be wound in a roll and mounted onto the apparatus.

Brier does not disclose the use of a silicone based quaternary ammonium salt.

Omura's teachings are described above and applied in the same manner.

It is generally considered to be prime facie obvious to combine compounds each of which is taught by the prior art to be useful for the same purpose in order to form a composition that is to be used for an identical purpose. The motivation for combining them flows from their having been used individually in the prior art, and from them being recognized in the prior art as useful for the same purpose. As shown by the recited teachings, instant claims are no more than the combination of conventional components of antimicrobial agents. It therefore follows that the instant claims define prime facie obvious subject matter. Cf. In re Kerhoven, 626 F.2d 848, 205 USPQ 1069 (CCPA 1980). It would have been obvious to a person of ordinary skill in the art to substitute one antimicrobial agent for another capable of performing the same function.

Response to Arguments

Applicant's arguments have been fully considered but they are not persuasive.

Applicant's arguments regarding Omura are discussed above and applied in the same manner. Applicant additionally argues the antimicrobial treatment step include passing through a drying frame at 325F (much higher than 100C, which is 212F). Additionally, there is nothing within Brier to suggest that use of the present invention process would result in a treated item whose antimicrobial properties can be regenerated by merely washing the item with a hypochlorite solution. . It is noted that the rejected claims do not limit the temperature of the drying step. Additionally, it is noted that the instant claims recite "wherein the antimicrobial properties CAN BE regenerated after

one or more uses by contacting....". The limitation of contacting the treated item with of hypochlorite solution is not a method step limitation of the instant claim, but rather a functional limitation. It is the examiners position that since the prior art teaches the same basic method steps and the same composition used, the treated item would have the same functional properties.

Claims 1, 3-5, 7, 9, 11, and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Levy et al. (US Patent 5,707,736) in view of Omura et al. (US Patent 6,384,254) or vice versa.

The teachings of Omura are discussed above and applied in the same manner.

Levy teaches a "dry, disposable, polymeric products having sustained-release anti-microbial activity, the product consisting essentially of a polymeric material selected from the group consisting of fibers, fabrics, sheets, films, and other stable woven, non-woven, and knitted materials prepared from natural, man-made and synthetic polymers and an amine salt anti-microbial agent, the anti-microbial agent being incorporated in the polymeric material without an intermediary adhesive, carrier or linking agent and being releasable therefore in anti-microbial effective amounts" (abstract).

Levy further teaches the products are "produced by: the polymeric materials are brought into contact with a solution of the antimicrobial agent by immersion, spraying, or coating; the solvent is separated from the treated polymeric material by soaking, evaporation, centrifugations, and the polymeric materials are then dried by utilizing

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forced hot air, oven drying, air at room temperature, microwave drying, or the use of heated drying drums, and vacuum chambers" (column 4, lines 19-28).

Regarding Claim 3, Example 4 of Levy describes "yarns made of cotton, viscose, and nylon were soaked in aqueous solutions of chlorohexidine hydrochloride or chlorohexidine gluconate, dried, and their antimicrobial activity was tested" (column 5, lines 65-67, column 6, lines 1-3).

Regarding Claims 7, 9, and 16-17 Levy additionally teaches, "the fabric is immersed in a tub containing a diluted anti-microbial agent at room temperature, in a continuous process, the fabric is partially dried by being pressed with a padder. Drying is done by a dryer, i.e., a hot air blowing chamber or a hot drum chamber, heated up to 120 C" (column 4, lines 28-33).

Regarding Claim 11, Example 1 of Levy describes "a matrix made of cotton gauze 75mm wide was soaked in 0.5% chlorohexidine gluconate aqueous solution at 25C and dried by forced hot air at 60C in a continuous process" (column 4, lines 60-64).

Regarding Claim 15, the examiner is interpreting the immersion step described above, by soaking and centrifugation to include the use of a washing machine. Standard washing machines uses these two functions as part of their cycles. The examiner is further interpreting the drying step utilizing a heated drying drum to include standard clothing drying.

It would have been obvious to a person of ordinary skill in the art to experiment with the combined the teachings of Omura and Levy in order to obtain antimicrobial properties to composite article. It would have been obvious to a person of ordinary skill

in the art to try to prepare such an article with materials and apparatus, common every day household items, within the grasp of their knowledge, leading to an anticipated result.

Response to Arguments

Applicant's arguments have been fully considered but they are not persuasive. Applicant argues While Levy appears to suggest that forced hot air drying can be used in imparting the antimicrobial properties to their items, there is nothing to suggest that the quaternary silicon based antimicrobials of Omura could be so used. In fact, Omura requires much higher temperatures in their treatment process. Accordingly, there would be no reason to use lower temperatures, and in fact, one of ordinary skill in the art would not expect that such lower temperatures would be useable in treating items with an antimicrobial agent such as Omura's. The examiner disagrees; it is the examiners position that it would have been obvious to a person of ordinary skill in the art to try to prepare such an article with materials and apparatus, common every day household items, within the grasp of their knowledge, leading to an anticipated result.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Omura et al. in view of Ohno et al. (US Patent 4,993,651).

Rubin's teaches are described about and applied in the same manner.

Rubin's does not teach a method of providing antimicrobial properties to a composite yarn wound on a bobbin.

Ohno teaches a method of winding yarn onto a bobbin.

It would be obvious to one of ordinary skill in the art at the time the invention was made to combine the bobbin threading teachings of Ohno with the anti-microbial coating techniques of Rubin in order to obtain a bobbin of yarn to be used in standard sewing machines. Applicant would have a reasonable expectation that the yarn would possess the anti-microbial properties desired, since the yarn would absorb the antimicrobial agent in the bath.

Response to Arguments

Applicant submitted no arguments regarding this rejection.

Claims 19-20, 22, 29-30, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Omura et al. (US Patent 6,384,254) in view of Smith III et al. (US Patent 6,759,127).

Omura's teaching are described above and applied in the same manner.

Omura does not disclose a copolymer of a long chain (C_{12} to C_{20}) alkyl dimethylaminotrihydroxysilylpropyl ammonium halide and a chloroalkyl trihydroxysilane.

Smith discloses a textile article having flame resistant properties. Smith also teaches "for those cases where antimicrobial properties are desired, an antimicrobial agent is added to the chemical treatment. Smith's preferred antimicrobial agent is an organosilane composition comprising about 16% by weight of chloropropyl trihydroxysilane and about 84% by weight of Octadecylaminodimethyl trihydroxysilylpropyl Ammonium Chloride, available from Aegis

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under the trademark AEM 5700. Applicant's specification discloses, "particularly preferred for use as the antimicrobial agent is a copolymer (which may or may not include partially or fully hydrolyzed forms) of octadecylaminodimethyltrihydroxysilylpropyl ammonium chloride and chloropropyltrihydroxysilane. Suitable such antimicrobials include, the antimicrobial agents from Aegis Environments such as AEM 5700 Antimicrobial, AEM 5772 Antimicrobial and AEGIS Antimicrobial" (page 6, lines 4-11).

It is generally considered to be prime facie obvious to combine compounds each of which is taught by the prior art to be useful for the same purpose in order to form a composition that is to be used for an identical purpose. The motivation for combining them flows from their having been used individually in the prior art, and from them being recognized in the prior art as useful for the same purpose. As shown by the recited teachings, instant claims are no more than the combination of conventional components of antimicrobial agents. It therefore follows that the instant claims define prime facie obvious subject matter. Cf. In re Kerhoven, 626 F.2d 848, 205 USPQ 1069 (CCPA 1980).

Response to Arguments

Applicant's arguments have been fully considered but they are not persuasive. Applicant argues, while Smith III discloses an antimicrobial agent such as that of the present invention, its combination with any of the cited references would not suggest the present invention, since there is nothing within the references to suggest that one can provide a composite item (made of two or more disparate

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materials) with antimicrobial properties using conditions that are mild such as those of a common household washer and dryer, with the treatment solution being reusable (preferred embodiment), and with the antimicrobial properties being able to be regenerated by merely contacting the treated item with a hypochlorite (bleach) solution after one or more uses. The examiner disagrees; KSR forecloses the argument that a specific teaching, suggestion, or motivation is required to support a finding of obviousness. It is the examiners position that it would have been obvious to a person of ordinary skill in the art to try to prepare such an article with materials and apparatus, common every day household items, within the grasp of their knowledge, leading to an anticipated result.

Claims 19, 21-22, 25, 27, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rubin et al. (US Patent 5,565,265) in view of Smith III. et al. (US Patent 6,759,127).

The teachings of Rubin are discussed above and applied in the same manner.

Rubin does not teach the use of a copolymer of a long chain octadecylaminodimethyltrihydroxysilylpropyl ammonium halide and chloropropyltrihydroxysilane.

Smith discloses a textile article having flame resistant properties. Smith also teaches "for those cases where antimicrobial properties are desired, an antimicrobial agent is added to the chemical treatment. Smith's preferred antimicrobial agent is an organosilane composition comprising about 16% by weight of

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chloropropyltrihydroxysilane and about 84% by weight of Octadecylaminodimethyltrihydroxysilylpropyl Ammonium Chloride, available from Aegis under the trademark AEM 5700. Applicant's specification discloses, "particularly preferred for use as the antimicrobial agent is a copolymer (which may or may not include partially or fully hydrolyzed forms) of octadecylaminodimethyltrihydroxysilylpropyl ammonium chloride and chloropropyltrihydroxysilane. Suitable such antimicrobials include, the antimicrobial agents from Aegis Environments such as AEM 5700 Antimicrobial, AEM 5772 Antimicrobial and AEGIS Antimicrobial" (page 6, lines 4-11).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have substituted one antimicrobial agent for another, since both references teach methods of giving fabrics antimicrobial properties.

Response to Arguments

Applicant submitted no arguments regarding this rejection.

Claims 19-20, 22-24, 27-28, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brier (US Patent 6,756,076) in view of Smith III et al. (US Patent 6,759,127).

The teachings of Brier are discussed above and applied in the same manner.

Brier does not teach the use of a copolymer of a long chain octadecylaminodimethyltrihydroxysilylpropyl ammonium halide and chloropropyltrihydroxysilane.

Smith discloses a textile article having flame resistant properties. Smith also teaches "for those cases where antimicrobial properties are desired, an antimicrobial agent is added to the chemical treatment. Smith's preferred antimicrobial agent is an organosilane composition comprising about 16% by weight of chloropropyltrihydroxysilane and about 84% by weight of Octadecylaminodimethyltrihydroxysilylpropyl Ammonium Chloride, available from Aegis under the trademark AEM 5700. Applicant's specification discloses, "particularly preferred for use as the antimicrobial agent is a copolymer (which may or may not include partially or fully hydrolyzed forms) of octadecylaminodimethyltrihydroxysilylpropyl ammonium chloride and chloropropyltrihydroxysilane. Suitable such antimicrobials include, the antimicrobial agents from Aegis Environments such as AEM 5700 Antimicrobial, AEM 5772 Antimicrobial and AEGIS Antimicrobial" (page 6, lines 4-11).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have substituted one antimicrobial agent taught by Brier for another taught by Smith, since both references teach methods of giving fabrics antimicrobial properties.

Response to Arguments

Applicant submitted no arguments regarding this rejection.

Claims 19, 21-23, 25, 27, 29, and 31-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Levy et al. (US Patent 5,707,736) in view of Smith III et al. (US Patent 6,759,127).

Levy teachings are described above and applied in the same manner.

Levy does not disclose the use of a copolymer of a long chain octadecylaminodimethyltrihydroxysilylpropyl ammonium halide and chloropropyltrihydroxysilane.

Smith discloses a textile article having flame resistant properties. Smith also teaches "for those cases where antimicrobial properties are desired, an antimicrobial agent is added to the chemical treatment. Smith's preferred antimicrobial agent is an organosilane composition comprising about 16% by weight of chloropropyltrihydroxysilane and about 84% by weight of Octadecylaminodimethyltrihydroxysilylpropyl Ammonium Chloride, available from Aegis under the trademark AEM 5700. Applicant's specification discloses, "particularly preferred for use as the antimicrobial agent is a copolymer (which may or may not include partially or fully hydrolyzed forms) of octadecylaminodimethyltrihydroxysilylpropyl ammonium chloride and chloropropyltrihydroxysilane. Suitable such antimicrobials include, the antimicrobial agents from Aegis Environments such as AEM 5700 Antimicrobial, AEM 5772 Antimicrobial and AEGIS Antimicrobial" (page 6, lines 4-11).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have substituted one antimicrobial agent taught by Brier for another taught by Smith, since both references teach methods of giving fabrics antimicrobial properties.

Response to Arguments

Applicant submitted no arguments regarding this rejection.

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rubin et al. (US Patent 5,565,265) in view of Ohno et al. (US Patent 4,993,651) and further in view of Smith et al. (US Patent 6,759,127).

Rubin's, Ohno's and Smith's teachings are described about and applied in the same manner.

Rubin's does not teach a method of providing antimicrobial properties to a composite yarn wound on a bobbin. Rubin also does not disclose the use of a copolymer of a long chain octadecylaminodimethyltrihydroxysilylpropyl ammonium halide and chloropropyltrihydroxysilane.

Ohno teaches a method of winding yarn onto a bobbin.

It would be obvious to one of ordinary skill in the art at the time the invention was made to combine the bobbin threading teachings of Ohno with the anti-microbial coating techniques of Rubin in order to obtain a bobbin of yarn to be used in standard sewing machines. Applicant would have a reasonable expectation that the yarn would possess

the anti-microbial properties desired, since the yarn would absorb the antimicrobial agent in the bath.

Response to Arguments

Applicant submitted no arguments regarding this rejection.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa S. Mercier whose telephone number is (571) 272-9039. The examiner can normally be reached on 7:30am-4pm Mon through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward can be reached on (571) 272-8373. The fax phone

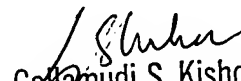
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number for the organization where this application or proceeding is assigned is 571-273-8300.

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MSMercier



Gopinudi S. Kishore, PhD
Primary Examiner
Group 1600